

On February 8, 1994, the Service designated approximately 6.4 million acres of critical habitat for the Mojave population of the desert tortoise in portions of California, Nevada, Arizona, and Utah (59 FR 5820), which became effective on March 10, 1994. Critical habitat is designated by the Service to identify the key biological and physical needs of the species and key areas for recovery, and focuses conservation actions on those areas. Critical habitat is composed of specific geographic areas that contain the primary constituent elements of critical habitat, consisting of the biological and physical attributes essential to the species' conservation within those areas, such as space, food, water, nutrition, cover, shelter, reproductive sites, and special habitats. The specific primary constituent elements of desert tortoise critical habitat are: Sufficient space to support viable populations within each of the six recovery units (RUs), and to provide for movement, dispersal, and gene flow; sufficient quality and quantity of forage species and the proper soil conditions to provide for the growth of these species; suitable substrates for burrowing, nesting, and overwintering; burrows, caliche caves, and other shelter sites; sufficient vegetation for shelter from temperature extremes and predators; and habitat protected from disturbance and human-caused mortality.

Approximately 1.2 million acres were designated as critical habitat in Nevada. Critical habitat units (CHUs) were based on recommendations for Desert Wildlife Management Areas (DWMAs) outlined in the *Draft Recovery Plan for the Desert Tortoise (Mojave Population)* (Service 1993). These DWMAs are also identified as "desert tortoise areas of critical environmental concern (ACECs)" by the BLM. Because the CHU boundaries were drawn to optimize reserve design, the CHU may contain both "suitable" and "unsuitable" habitat. Suitable habitat can be generally defined as areas that provide the primary constituent elements. The Yucca Mountain project area does not occur within desert tortoise critical habitat.

On June 28, 1994, the Service approved the final Desert Tortoise Recovery Plan (Service 1994). The Desert Tortoise Recovery Plan divides the range of the desert tortoise into 6 RUs and recommends establishment of 14 DWMAs throughout the RUs. Within each DWMA, the Desert Tortoise Recovery Plan recommends implementation of reserve-level protection of desert tortoise populations and habitat, while maintaining and protecting other sensitive species and ecosystem functions. The design of DWMAs should follow accepted concepts of reserve design. As part of the actions needed to accomplish recovery, the Desert Tortoise Recovery Plan recommends that land management within all DWMAs should restrict human activities that negatively impact desert tortoises (Service 1994). DWMAs have been designated by the BLM through development or modification of their land use plans in Nevada, Arizona, and Utah. Land-use planning activities are underway in California to designate DWMAs/ACECs. The regulation of activities within critical habitat through section 7 consultation is based on recommendations in the Desert Tortoise Recovery Plan. DWMAs/ACECs have been designated in Utah, Arizona, and Nevada. Similar designations are in progress in California for the Western

Mojave RU, and Northern and Eastern Colorado RUs. Yucca Mountain occurs within the Northeastern Mojave RU near the boundary with the Eastern Mojave RU, but not within a proposed DWMA.

The Northeastern Mojave RU occurs primarily in Nevada, but it also extends into California along the Ivanpah Valley and into extreme southwestern Utah and northwestern Arizona. Vegetation within this unit is characterized by creosote bush scrub, big galleta-scrub steppe, desert needlegrass scrub-steppe, and blackbrush scrub (in higher elevations). Topography is varied, with flats, valleys, alluvial fans, washes, and rocky slopes. Much of the northern portion of the RU is characterized as basin and range, with elevations from 2,500 to 12,000 feet. Desert tortoises typically eat summer and winter annuals, cacti, and perennial grasses. Desert tortoises in this RU, the northern portion of which represents the northernmost distribution of the species, are typically found in low densities (approximately 10 to 20 adults per square mile).

Recovery of the desert tortoise may occur at the recovery unit level which allows populations within each of the six recovery units to be recovered and delisted individually. Similarly, the jeopardy and adverse modification standards may be applied within or across recovery units. Thus, proposals to implement the Desert Tortoise Recovery Plan in portions of a recovery unit cannot be evaluated with regard to jeopardy or adverse modification in a section 7 consultation without an understanding of proposed or existing management prescriptions occurring elsewhere in the recovery unit.

Long-term monitoring of desert tortoise populations is a high priority recovery task as identified in the Desert Tortoise Recovery Plan. From 1995 to 1998, pilot field studies and workshops were conducted to develop a monitoring program for desert tortoise. In 1998, the Desert Tortoise Management Oversight Group chose line distance sampling as the appropriate method to determine rangewide desert tortoise population densities and trends. Monitoring of populations using this method is underway across the range of the desert tortoise and baseline population data will be forthcoming within the next year. Successful rangewide monitoring will enable managers to evaluate the overall effectiveness of recovery actions and population responses to these actions, thus guiding recovery of the Mojave desert tortoise.

Environmental Baseline

The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation process.

Yucca Mountain is located in Nye County, Nevada, approximately 93 miles northwest of Las Vegas and crosses the jurisdictional boundaries of DOE, the U.S. Air Force (USAF), and BLM. The areas managed by the DOE and USAF have been reserved for use by government agencies in support of national security needs, and have been restricted from public access and grazing since the early 1950s (DOE 1997).

Yucca Mountain occurs on the northern edge of the Mojave Desert along an ecotone between the Great Basin and Mojave deserts with a maximum elevation of 4,950 feet. The area is characterized by three vegetation associations (DOE 1997). An association dominated by shrubs including primarily creosotebush (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), spiny hopsage (*Grayia spinosa*), and Mormon tea (*Ephedra nevadensis*) is found on alluvial slopes in the Mojave Desert zone below approximately 4,265 feet. Mormon tea, spiny hopsage, and wolfberry (*Lycium andersonii*) dominate the vegetation association in the transition zone on alluvial slopes above approximately 4,265 feet and on the upper slopes of Yucca Mountain. The third vegetation association occurs on upper alluvial slopes and relatively level ridges, between approximately 3,800 and 4,950 feet is dominated by blackbrush (*Coleogyne ramosissima*) (DOE 1997).

Status of the Species in the Action Area

Karl (1989) conducted desert tortoise surveys in the Yucca Mountain area between September 17 and 23, 1989. A total of 23 strip transects were walked to assess distribution, habitat associations, and relative abundances of tortoise. According to the surveys, tortoises preferred large alluvial fans in the eastern portion of the area. Karl estimated that the density of desert tortoises ranged from 10 to 50 tortoises per square mile. The steep ridge/drainage mosaic in the western portion of Yucca Mountain had the least sign, and was considered poor habitat. Existing disturbance as a result of DOE activities in the Yucca Mountain area consisted of approximately 641 acres as a result of drill holes, trenches and test pits, seismic surveys, monitoring stations, bladed use facilities, and roads and corridors. The area with greatest disturbance was located along Drill Hole Wash Road. Additional disturbance was observed as a result of trespass cattle grazing.

Biologists with EG&G/Energy Measurements (EG&G/EM) (1991) conducted 341 transects from 1981 through 1984 in the Yucca Mountain area, covering approximately 322 linear miles. During the transects, 0.17 tortoise sign was found per mile of transect walked, including nine tortoises. Sign was found between 3,280 and 5,250 feet in elevation. Between 1987 and 1990, EG&G/EM biologists conducted additional transects during tortoise population and impact monitoring studies on the NTS. During these surveys, 54 desert tortoises were found at Yucca Mountain during 1989-1990 (EG&G/EM 1991). Based on transects and studies conducted from

1981 through 1995, DOE concluded that desert tortoises are widespread throughout Yucca Mountain and occur in all three of the common vegetation associations at Yucca Mountain (DOE 1997). Observational data recorded in the Yucca Mountain area during field work conducted from 1989 through 1995 suggest that desert tortoise densities are within the range of 10 to 50 per square mile presented by Karl (1989).

Between July 1991 and September 1995, biologists under contract to DOE monitored 95 radio telemetered tortoises to determine their location and behavior. Data collected during this monitoring program indicated that tortoises were inactive November 15 through February 15. During this period, tortoises were in burrows during 4,102 of 4,119 observations (Rautenstrauch et al. 1997). Because Yucca Mountain is located at higher elevations than average (approximately 3,200 to 4,950 feet) and at the northernmost distribution of the range of desert tortoise, these data may be different from inactive periods in other parts of the range of the desert tortoise. Based on the information above, the Service determined the tortoise active season at Yucca Mountain to be November 15 through February 15.

Major Activities Authorized Under Sections 7 and 10(a)(1)(A) of the Act in the Action Area

On February 9, 1990, the Service issued a non-jeopardy biological opinion to DOE for site characterization studies at Yucca Mountain (File No. 1-5-90-F-6) which was reinitiated on December 9, 1996, and superceded by a new biological opinion on July 23, 1997 (File No. 1-5-96-F-307R). A total of 375 acres of desert tortoise habitat has been disturbed of the 450 acres that DOE anticipated to disturb as a result of site characterization activities (DOE 2000a). During the site characterization studies, a total of five (5) desert tortoises were killed or injured, all of which were within the incidental for the 450-acre project area. Four (4) of these mortalities were the result of tortoise encounters with project-related vehicles. The fifth tortoise was a hatchling which fell into a project trench and died. An additional 28 tortoises were moved out of harm's way. Two of the displaced tortoises subsequently died; however, it was not determined to be a direct result of project activities.

On August 26, 1994, the Service issued a recovery permit (PRT-781234) to EG&G/EM under section 10(a)(1)(A) of the Act to conduct studies on hatchling and adult desert tortoises in Nevada and California which was originally covered under EG&G's prior permit, PRT-683011. In their 1989 biological assessment for the site characterization studies at Yucca Mountain (DOE 1989), DOE proposed to continue a desert tortoise population monitoring program initiated in 1989 at Yucca Mountain, which was incorporated by reference in the terms and conditions of the 1990 biological opinion. These studies were conducted by EG&G/EM under PRT-781234 at

Yucca Mountain and elsewhere on the NTS. Between 1989 and 1995, a total of 555 tortoises were captured and marked; 308 of these tortoises were radio telemetered. Effective December 31, 1995, EG&G/EM ended their contract with DOE for the Yucca Mountain Project and the permit was not renewed.

Programmatic Biological Opinions Issued for Desert Tortoise in Nevada

File No. 1-5-91-F-112. On September 26, 1991, the Service issued a programmatic biological opinion to the BLM's Las Vegas District for implementation of their Management Framework Plan (MFP) within the boundaries of Clark County's incidental take permit in the Las Vegas Valley. As a result of the action, approximately 42,240 acres of BLM land were authorized for disposal by sale, exchange, mineral leases, rights-of-way leases, or recreation or public purpose leases. These lands could be developed for residential, industrial, commercial, and public infrastructure projects to accommodate rapid urban development. The biological opinion concluded that the proposed action to implement the BLM's MFP was not likely to jeopardize the continued existence of the Mojave population of the desert tortoise; no critical habitat would be destroyed or adversely modified. Under the 1991 programmatic biological opinion, the BLM disposed of 5,252 acres out of the 42,240 acres originally identified.

File No. 1-5-96-F-023R. In order to expand the programmatic boundary from 263,267 acres to 378,978 acres to accommodate the rapid urban development in the Las Vegas Valley and surrounding area, the BLM reinitiated consultation on their 1991 programmatic biological opinion described above. On April 11, 1996, the Service issued a programmatic biological opinion to the BLM's Las Vegas District for implementation of their MFP and the land exchange portion of their Stateline Resource Management Plan within the Las Vegas Valley. Implementation of these plans, when finalized, may result in disposal or development of approximately 125,000 acres of land administered by the BLM by sale, land exchange, or lease. As a result of urban expansion, most BLM lands within the Las Vegas Valley are highly fragmented and impacted by human activities, particularly a 4,000-acre "exclusionary" zone. The BLM delineated an exclusionary zone within the programmatic boundary which does not contain suitable desert tortoise habitat. Except for lands within the exclusionary zone, the BLM will collect a mitigation fee of \$623 per acre, as indexed for inflation, to compensate for the loss of tortoise habitat within the programmatic boundary. The fees will be used to fund management actions which are expected to provide direct and indirect benefits to the desert tortoise over time, which will assist in its recovery. This opinion remains in effect.

File No. 1-5-96-F-33. On August 22, 1996, the Service issued a biological opinion to the Department of Energy/Nevada Operations (DOE/NV) for programmatic activities on the NTS over the next 10 years, excluding the Yucca Mountain Project. The NTS occupies 1,350 square

miles in Nye County, approximately 65 miles northwest of Las Vegas. All land on the NTS is managed by DOE/NV, and access is strictly controlled. Between 3,000 and 4,000 people work at the NTS, with the majority residing in Mercury, Nevada. Although large parts of the NTS have been affected by human activities, the majority of the site remains relatively undisturbed. Most disturbances are concentrated in the bottom of Yucca, Frenchman, and Jackass Flats, and on parts of the Pahute and Rainer Mesas. In the biological opinion, the Service concluded that up to 13 desert tortoises may be taken per year (3 mortalities or injuries and 10 captures/displacements from harm's way) as a result of DOE/NV activities, and a total of 3,015 acres of desert tortoise habitat may be disturbed during project construction over the 10-year period.

File No. 1-5-97-F-251. On November 21, 1997, the Service issued a programmatic biological opinion to the BLM for implementation of multiple-use actions within their Las Vegas District, excluding desert tortoise critical habitat, proposed desert tortoise ACECs, and the area covered by the Las Vegas Valley programmatic consultation. The BLM proposes to authorize activities within the programmatic area that may result in loss of tortoises or their habitat through surface disturbance, land disposal, and fencing, for a period of 5 years. The total area covered by this programmatic biological opinion is approximately 2,636,600 acres, which includes approximately 263,900 acres of BLM-withdrawn lands in Clark County. This programmatic consultation is limited to activities which may affect up to 240 acres per project, and a cumulative total of 10,000 acres, of desert tortoise habitat excluding land exchanges and sales. Only land disposals by sale or exchange within Clark County may be covered under this consultation up to a cumulative total of 14,637 acres. Therefore, a maximum total of 24,637 acres of desert tortoise habitat may be affected by the proposed programmatic activities. The BLM collects a remuneration fee of \$623 per acre of disturbance of desert tortoise habitat, as indexed for inflation.

File No. 1-5-98-F-053. On June 18, 1998, the Service issued a programmatic biological opinion to the BLM for implementation of the Las Vegas RMP. The BLM collects a remuneration fee of \$623 per acre of disturbance of desert tortoise habitat, as indexed for inflation. The project area for this consultation covers all lands managed by the BLM's Las Vegas Field Office, including desert tortoise critical habitat, proposed desert tortoise ACECs, and BLM-withdrawn land. The Las Vegas Field Office designated approximately 648 square miles of tortoise habitat as desert tortoise ACEC in the Northeastern Mojave RU, and approximately 514 square miles of tortoise habitat as desert tortoise ACEC in the East Mojave RU, through the final RMP. As identified in the RMP, the BLM would manage 743,209 acres of desert tortoise habitat within four tortoise ACECs for desert tortoise recovery. To accomplish recovery of the desert tortoise in the Northeastern and Eastern Mojave RUs, the Las Vegas Field Office will implement appropriate management actions in desert tortoise ACECs through the RMP which includes:

1. Manage for zero wild horses and burros within desert tortoise ACECs.
2. Limit utility corridors to 3,000 feet in width, or less.
3. Do not authorize new landfills or military maneuvers.
4. Require reclamation for activities which result in loss or degradation of tortoise habitat, with habitat to be reclaimed so that pre-disturbance condition can be reached within a reasonable time frame.
5. Limit all motorized and mechanized vehicles to designated roads and trails within ACECs and existing roads, trails, and defined dry washes outside ACECs.
6. Allow non-speed OHV events within ACECs, subject to restrictions and monitoring determinations.
7. Prohibit OHV speed events, mountain bike races, horse endurance rides, four-wheel hill climbs, mini-events, publicity rides, high-speed testing, and similar speed based events.
8. Within ACECs, do not allow commercial collection of flora. Only allow commercial collection of fauna within ACECs upon completion of a scientifically credible study that demonstrates commercial collection of fauna does not adversely impact affected species or their habitat. This action will not affect hunting or trapping, and casual collection as permitted by the State.

File No. 1-5-99-F-450. On March 3, 2000, the Service issued a programmatic biological opinion to the Bureau for implementation of the Caliente Management Framework Plan (CMFP). The Bureau collects a remuneration fee of \$623 per acre of disturbance of desert tortoise habitat, as indexed for inflation. The planning area for this consultation covers all desert tortoise habitat managed by the Bureau's Ely Field Office and Caliente Field Station within the Ely District. The planning area comprises approximately 754,600 acres of desert tortoise habitat, including 244,900 acres of designated desert tortoise critical habitat. The Bureau's Ely Field Office will implement management actions described in the biological opinion including multiple-use activities. The CMFP was developed to assist in the recovery and delisting of the Mojave population of desert tortoise in the NEMRU. The CMFP designated three ACECs with a total acreage of approximately 212,500 acres (332 square miles) to be managed primarily for recovery of the desert tortoise.

Implementation of actions by the Ely Field Office which may affect desert tortoise include: Livestock grazing; wild horse and burro management; land disposal and acquisition; rights-of-way management; management of recreational activities including OHV use; minerals management; fire management; and public transportation and access. These actions may result in loss of tortoises or their habitat through programmatic activities over a 10-year period.

Habitat Conservation Plans Completed in Nevada

On May 23, 1991, the Service issued a biological opinion on the issuance of incidental take permit PRT-756260 (File No. 1-5-91-FW-40) under section 10(a)(1)(B) of the Act. The Service concluded that incidental take of 3,710 desert tortoises on up to 22,352 acres of habitat within the Las Vegas Valley and Boulder City in Clark County, Nevada, was not likely to jeopardize the continued existence of the desert tortoise. The permit application was accompanied by the *Short-Term Habitat Conservation Plan for the Desert Tortoise in the Las Vegas Valley, Clark County, Nevada* (Regional Environmental Consultants 1991) (short-term HCP) and an implementation agreement that identified specific measures to minimize and mitigate the effects of the action on desert tortoises.

On July 29, 1994, the Service issued a non-jeopardy biological opinion on the issuance of an amendment to incidental take permit PRT-756260 (File No. 1-5-94-FW-237) to extend the expiration date of the existing permit by 1 year (to July 31, 1995) and include an additional disturbance of 8,000 acres of desert tortoise habitat within the existing permit area. The amendment did not authorize an increase in the number of desert tortoises allowed to be taken under the existing permit. Additional measures to minimize and mitigate the effects of the amendment were also identified. Approximately 1,300 desert tortoises were taken under the authority of PRT-756260, as amended. In addition, during the short-term HCP, as amended, approximately 541,000 acres of desert tortoise habitat have been conserved in Clark County on lands administered by the BLM and the National Park Service.

On February 10, 1995, the Service issued an incidental take permit (PRT-776604) to Nye County for development and operation of a landfill near Pahrump, Nevada. The permit authorized take of 20 desert tortoises and loss of 80 acres of tortoise habitat as a result of the landfill for the next 30 years. Over the term of the permit, Nye County shall transfer up to a total of \$25,920 into a desert tortoise trust fund as mitigation for the alteration of up to 80 acres of suitable desert tortoise habitat in the project area. These funds shall be used for the purchase, installation, and maintenance of cautionary tortoise road signs. Surplus funds will be used for public education on the Mojave desert and its inhabitants, including the desert tortoise.

On July 11, 1995, the Service issued an incidental take permit (PRT-801045) to Clark County, Nevada, including cities within the county and the Nevada Department of Transportation (NDOT), under the authority of section 10(a)(1)(B) of the Act. The permit became effective August 1, 1995, and allowed the "incidental take" of desert tortoises for a period of 30 years on 111,000 acres of non-Federal land in Clark County, and approximately 2,900 acres associated with NDOT activities in Clark, Lincoln, Esmeralda, Mineral, and Nye Counties, Nevada. The *Clark County Desert Conservation Plan* (CCDCP) (Regional Environmental Consultants 1995), served as the permittees' habitat conservation plan and detailed their proposed measures to minimize, monitor, and mitigate the effects of the proposed take on the desert tortoise. The permittees imposed, and NDOT paid, a fee of \$550 per acre of habitat disturbance to fund these measures. The permittees expended approximately \$1.65 million per year to minimize and mitigate the potential loss of desert tortoise habitat. The majority of these funds were used to implement minimization and mitigation measures, such as increased law enforcement; construction of highway barriers; road designation, signing, closure, and rehabilitation; and tortoise inventory and monitoring within the lands initially conserved during the short-term HCP and other areas being managed for tortoise recovery (e.g., ACECs or DWMAs). The benefit to the species, as provided by the CCDCP, substantially minimized and mitigated those effects which occurred through development within the permit area and aided in recovery of the desert tortoise.

On November 22, 2000, the Service issued an incidental take permit (TE-034927-0) to Clark County, Nevada, including cities within the county and the NDOT, under the authority of section 10(a)(1)(B) of the Act. The permit supercedes the incidental take permit for the CCDCP. The new permit allows the "incidental take" of the federally threatened desert tortoise, the federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*), and 76 currently unlisted species for a period of 30 years on 145,000 acres of non-Federal land in Clark County, and within NDOT rights-of-way, south of the 38th parallel in Nevada. The *Clark County Multiple Species Habitat Conservation Plan and Environmental Impact Statement* (MSHCP) (Clark County and Service 2000), serves as the permittees' habitat conservation plan and details their proposed measures to minimize, monitor, and mitigate the effects covered activities on the 78 species. In addition to measures specified in the MSHCP and its implementing agreement, the permittees shall comply with the special terms and conditions of the permit and measures stated in sections 3C and 3D of the CCDCP, which were incorporated by reference into the MSHCP and incidental take permit.

Yucca Mountain does not include private land and occurs in Nye County, therefore the project area occurs outside Clark County's incidental take permit areas for the CCDCP and MSHCP.